

Work Order ID 74796

74796

Page 1

October 6, 2011 1:40:06 PM

Item ID: D119-646-241

Accept

N9000040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: M.C. J Date: 11/10/06 Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3887	B								
IIN-D119-646	B								

SCRAP

100

0.00

100

DC

Document Control

Memo

Photocopy bluefile & type labels per PPP D119-646-241 CHG001

110

0.00

110

Skidtubes

Skidtubes

Memo

1- inspect Mat'L D2500-1-190 for damage

2- Remove 45.3125" from d2500-1-180 deburr ends.

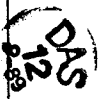



3- Ensure squareness of ends and scribe batch#

02 12/05/16

W/O: 74796		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D118-646-241 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.7.18	140	Overall length of tube is 134.125" after bending and cutting.	 12.7.18	Acceptable.	N/A	 12/06/07	 12.7.18	 12/06/07

NOTE: Date & initial all entries

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

120	Chemical Conversion Coat per QSI005 4.1	0.00							
-----	---	------	--	--	--	--	--	--	--

120

HandFinish

Memo

Hand Finishing

121	QC5- Inspect Part Finish	0.00							
-----	--------------------------	------	--	--	--	--	--	--	--

121

QC

Memo

Quality Control

122	QC5- Inspect part completeness to step on W/O	0.00							
-----	---	------	--	--	--	--	--	--	--

122

QC

Memo

Quality Control

DC 12/05/16

1 0 BE 12/05/16

1 0 BE 12/05/16

W/O:		WORK ORDER CHANGES					
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Required Date: 10/17/11 Req'd Qty: 1.00 ***1***

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

Skidtubes

Skidtubes

Memo

0.00

1-Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill

2-Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) ***DO NOT OPEN FWD Saddles Holes***

3- Deburr, blow out chips from inside of tube.

4 -Bond web in place as per Dwg D3887 & QSI 015.

A/RSikaflex-291 12/22/Sikaflex expire date: 2013-01-04Start: 12/05/16 Time: 2130

Finish: _____ Time: _____

***** (Adhere for 12 hours) *****

DC 12/05/16

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Run Start ***NR1***

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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135

QC5- Inspect part completeness to step on W/O

0.00


135

QC

Memo

0.00

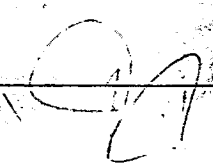
Quality Control

 12-5-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
15-2-54								

NOTE: Date & initial all entries

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Required Date: 10/17/11 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00

140

Skidtube

Skidtube

Memo

0.00

1- Bend FWD end of tube using bender 1 and bend prog. D3887. ***Must use bending aid DT9544, ensure proper positioning***

✓ 2- Cut FWD end of tube as per dwg D3887. ***Verify measurement***

✓ 3- Buff out marks left from bending

✓ 4- Drill FWD cap holes using DT8215, Open FWD & AFT cap holes to 0.208"

✓ 5- Open FWD saddle holes to finished size as per dwg D3887

✓ 6- Drill FWD x-bolt spacer holes to finished size (holes must be laid out manually)

✓ 7- Drill Tow ring hole, holes must be laid out manually. Open to finished size.

✓ 8- Deburr and blow out chips from inside of tube.

DP 12-6-19

SAD

12-07-20

7/10/11

W/O: 74796

WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D119-646241 PAR #: _____ Fault Category: skid tub NCR: Yes No DQA: 1/10 Date: 12/08/13
 Resolution: _____ Disposition: Scrap QA: N/C Closed: 1/10 Date: 12/08/14

NCR: 12-1658

WORK ORDER NON-CONFORMANCE (NCR) 1377.90

DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/02/30	#140.6	FB 200K hole found aft was drilled at about 14.21 Day call for 15.21. P.C. employee miss read tape mark	<u>12/08/13</u> <u>Q51042</u>	Scrap tape tube according to DWS S. Email. see Attached Email	SAD 12-08-01	<u>12-8-1</u>	<u>12/03/01</u> <u>Q51042</u>	<u>12/03/30</u> <u>DAS 16</u>
		NO TOOLING		PA; Make Sig (tooling) DT 9816 / PAI ATTACHED	<u>12-7-31</u>	<u>12/02/31</u>		<u>12/03/02</u> <u>DAS 16</u>
				Remove web & Re-STOCK	SAD 12-08-01	<u>12-8-1</u>		

NOTE: Date & initial all entries

Eric Downing

From: David Shepherd <dshepherd@dartaero.com>
Sent: Monday, July 30, 2012 3:13 PM
To: 'Eric Downing'; 'Alex Pharand'
Cc: 'Mike Petsche'; 'L Lacelle'; psmith@dartaero.com; 'Bill Beckett'; Isam el Kassis
Subject: RE: D3887-13

Eric,

My recommendation is to scrap the tube.

Bill and Isam,

Again ... FYI ... Obviously our tooling is not world class here.

David

From: Eric Downing [<mailto:edowning@dartaero.com>]
Sent: July-30-12 11:46 AM
To: David Shepherd; Alex Pharand
Cc: 'Mike Petsche'; 'L Lacelle'; psmith@dartaero.com
Subject: D3887-13

Hello David

Sorry to bug you again but I have another problem for you to approve. I have here a D3887 (D119-646-241) skid tube with a hole drilled in the wrong location. It is the 20th hole from aft. The hole was drilled approx. 1.0" out. The measurement on the drawing calls 15.21" and the hole is at 14.21". tube is bent and has the web bonded in but has nothing welded in.

Could we be able to weld in a plug, grind the welds flush and relocate the holes to the correct dimension on the drawing. Is this acceptable rework?

The root cause is the fabricator misread his tape measure due to the fact that these holes are laid out by hand with NO help from tooling.

Thanks

Eric Downing
QC Corrdinator
Dart Aerospace LTD

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Cust Item ID:

Required Date: 10/17/11 Req'd Qty: 1.00

1

Customer:

Reference:

Run Start

NR1

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop

NR2

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC5- Inspect part completeness to step on W/O	0.00							
150									
QC	Memo	0.00							
Quality Control									
160		0.00							
160									
Skidtubes	Memo	0.00							
Skidtubes	1- Countersink crossbolt spacer holes, and prepare tube for welding, deburr.								
	2-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/RAluminum Rod _____								
	3-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole.								
	4-Counterbore x-bolt spacer holes as per Dwg D3887.								
	5- Deburr and blow out chips from inside of tube								

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
200									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: _____ OVEN TEMPERATURE: _____ FINISH TIME: _____								
210	QC3- Inspect Part Finish	0.00							
210									
QC	Memo	0.00							
Quality Control									
240		0.00							
240									
HandFinish	Memo	0.00							
Hand Finishing	1-Install wearplates as per Dwg D3887. 2 -Inspect for foreign objects as per QSI 024 3 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 _____ Sikaflex expire date: _____								

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	Identify as per dwg & Stock Location: _____	0.00							
260									
Packaging	Memo	0.00							
Packaging									
270	QC21- Final Inspection - Work Order Release	0.00							
270									
QC	Memo	0.00							
Quality Control									

R12-08-2
Ø

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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74796

Parent Item: D119-646-241

D119-646-241

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 10/06/11**Required Date:** 10/17/11

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-190 *D2500-1-190* Ext'n - 'I' Beam Tube 4"		Manufactured	No			110	Each	27.0000	1	1			
				<u>Location</u>	B74777	<u>Loc Qty</u>		<u>Loc Code</u>	**	DC 12/05/16			
				LG		27			①				
					66296	27							
D3885-1 *D3885-1* Standard Web		Manufactured	No			140	Each	12.0000	1	1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>	**	DC 12/05/16			
				LG		12			①				
					52421	12							
D3903-1 *D3903-1* Spacer		Manufactured	No			160	Each	15.0000	12	12			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>	**				
				LG001		15							
					47476	7							
					51849	8							
D3681-1 *D3681-1* Spacer		Manufactured	No			160	Each	39.0000	8	8			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>	**				
				LG		39							
					68958	2							
					69893	2							
					71845	35							

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Picklist Print

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Start Date: 10/06/11

Required Date: 10/17/11

Start Qty: 1.00

Required Qty: 1.00

D2855-3 Manufactured No 240 Each 7.0000 2 2

D2855-3

Cap

Location

Loc Qty

Loc Code

FP005

7

52281

7

AN3C5A Purchased No 240 Each 1,520.000 4 4

AN3C5A

Bolt

Location

Loc Qty

Loc Code

FP-A

7

115835

7

ST350

1513

116419

28

117343

314

117764

169

117872

2

118451

500

119127

500

D3904-1 Manufactured No 240 Each 236.0000 16 16

D3904-1

Washer

Location

Loc Qty

Loc Code

ST090

236

51875

236

D3672-1 Manufactured No 240 Each 360.0000 4 4

D3672-1

Phenolic Washer

Location

Loc Qty

Loc Code

ST074

360

72229

360

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Start Date: 10/06/11

Required Date: 10/17/11

Start Qty: 1.00

Required Qty: 1.00

*D3849-041 Manufactured No

240

Each

3.0000

1

1

D3849-041******

FWD WEARPLATE ASSY, STD/FLOOR GEAR

LocationLoc QtyLoc Code

FP009

3

53030

3

D3849-043 Manufactured No

240

Each

3.0000

1

1

D3849-043******

AFT WEARPLATE ASSY, STD GEAR

LocationLoc QtyLoc Code

FP009

3

52402

3

AN3C46A Purchased No

240

Each

67.0000

8

8

AN3C46A******

BOLT

LocationLoc QtyLoc Code

ST355

67

118757

17

118758

50

MS21043-3 Purchased No

240

Each

951.0000

8

8

MS21043-3******

Nut

LocationLoc QtyLoc Code

FG

72

103691

72

ST301

879

118077

1

118614

492

118686

386

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Shop Packet Print

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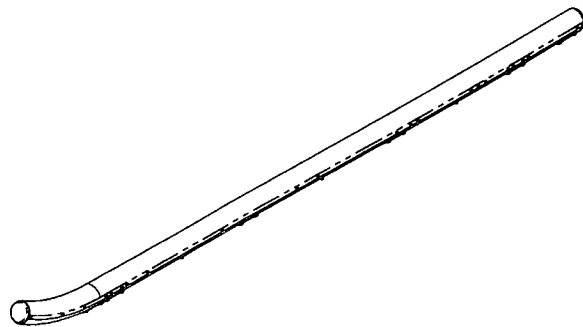
W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries



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WORK ORDER
NO. 74796

MLS
11-10-6

D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3887-043 STANDARD SKIDTUBE ASSY WITH WEAPLATE (SIMILAR)
D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-1 WEB
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3887-041 = 32.0 lbs
D3887-043 = 37.0 lbs
D3887-045 = 38.1 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES
ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT
PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT
PORTION OF THE TUBE.
- 10) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE
WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8931 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS.
INSTALL AELS-1032-130 INTO D3887-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS
WITH SIKAFLEX-241/-291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3887-041	STD SKIDTUBE ASSY WITH WEARPAD
2		X		D3887-043	STD SKIDTUBE ASSY WITH WEARPLATE
3			X	D3887-045	STD SKIDTUBE ASSY WITH TRAINING WEARPLATE
11	2	2	2	D2855-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	4	4	4	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
15	5			D3846-1	GASKET
16	1			D3846-11	GASKET
17	5	5		D3847-1	WEARPAD
18	1	1		D3847-11	AFT WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEAPLATE ASSY
21		1		D3847-047	AFT WEARPLATE ASSY
22			1	D3849-041	FWD TRAINING WEARPLATE ASSY
23			1	D3849-043	AFT WEARPLATE ASSY
24	1	1	1	D3885-1	STANDARD WEB
25	1	1		D3887-11	STANDARD SKIDTUBE
26			1	D3887-13	STANDARD SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
41	30	30		ALS4-1032-130	INSERT
42	34	34	4	AN3C5A	BOLT
43			8	AN3C46A	BOLT
44	34	34		NAS1149C0332R	WASHER (OR AN960C10L)
45			8	MS21043-3	NUT

RELEASED
09/07/15

B	ALS4-1032-130 WAS AELS-1032-130, ZN C4-1, C5-7, C3-7; ADD DT8931, ZN A6-1; ADD 134.04, ZN C4-8; D2855-3 WAS D2575 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4); AN3C5A WAS AN3C4A (ZN C6-2, C2-2, C6-3, C2-3, C6-4, C2-4)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
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MFG APPR.	RF	D3887	SHEET 1 OF 8
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DE APPR.	RF	A119 STD SKIDTUBE ASSY	NTS
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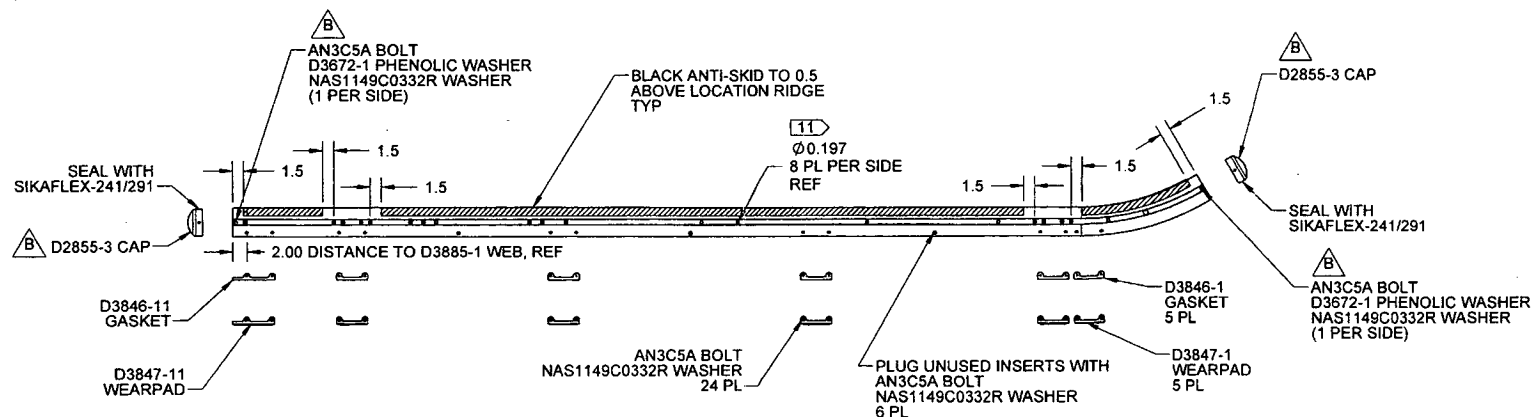
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			




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D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD
(MAKE FROM D3887-11)

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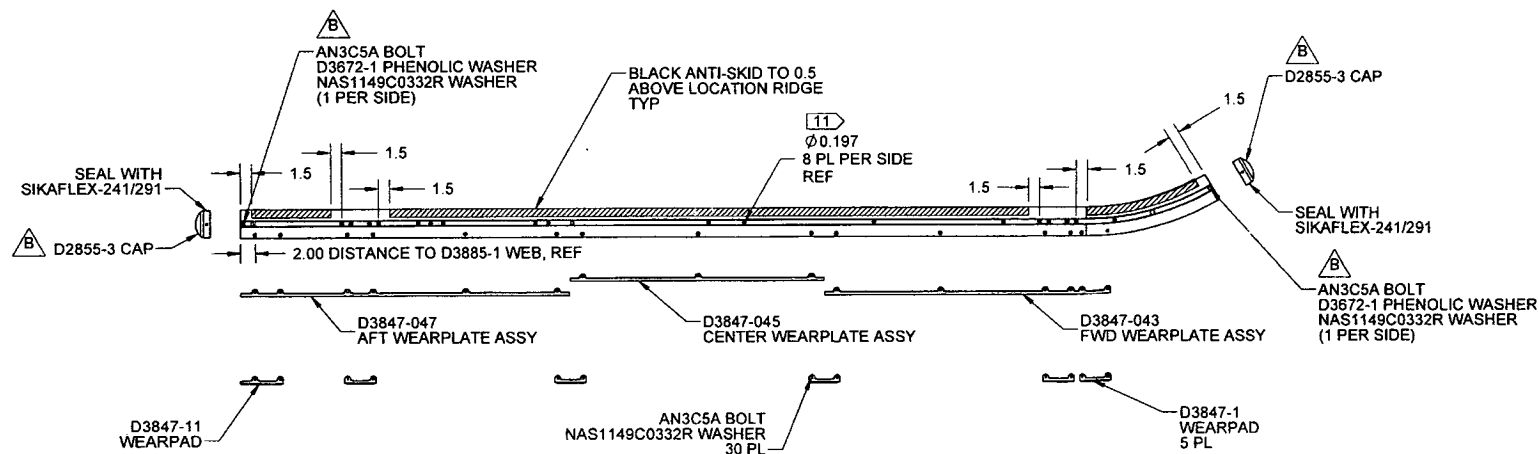
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE
(MAKE FROM D3887-11)

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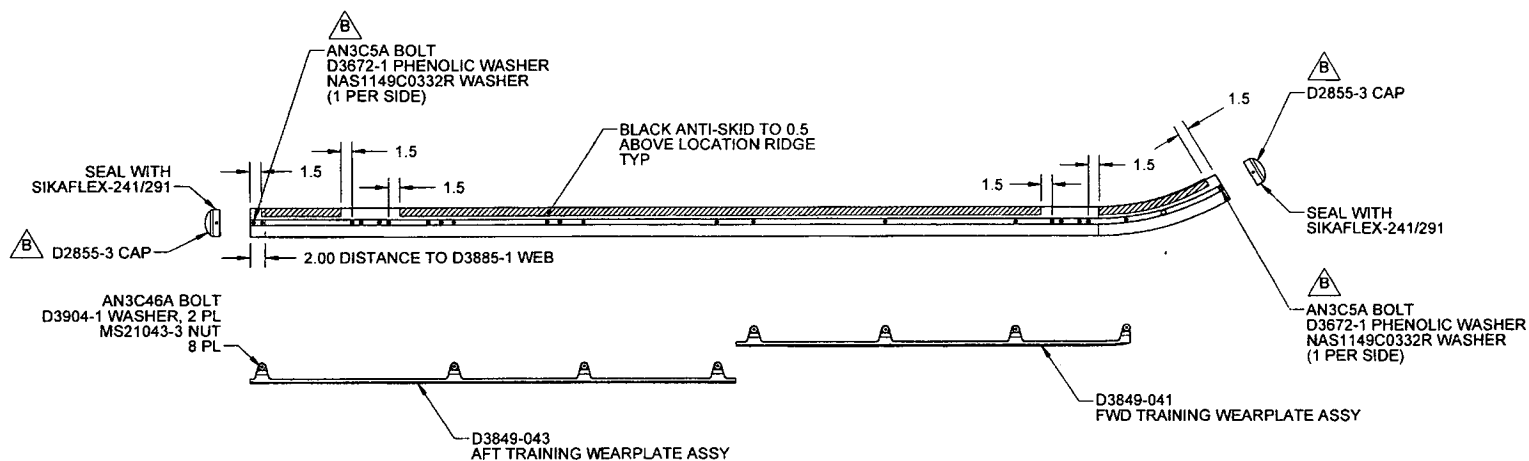
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D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE
(MAKE FROM D3387-13)

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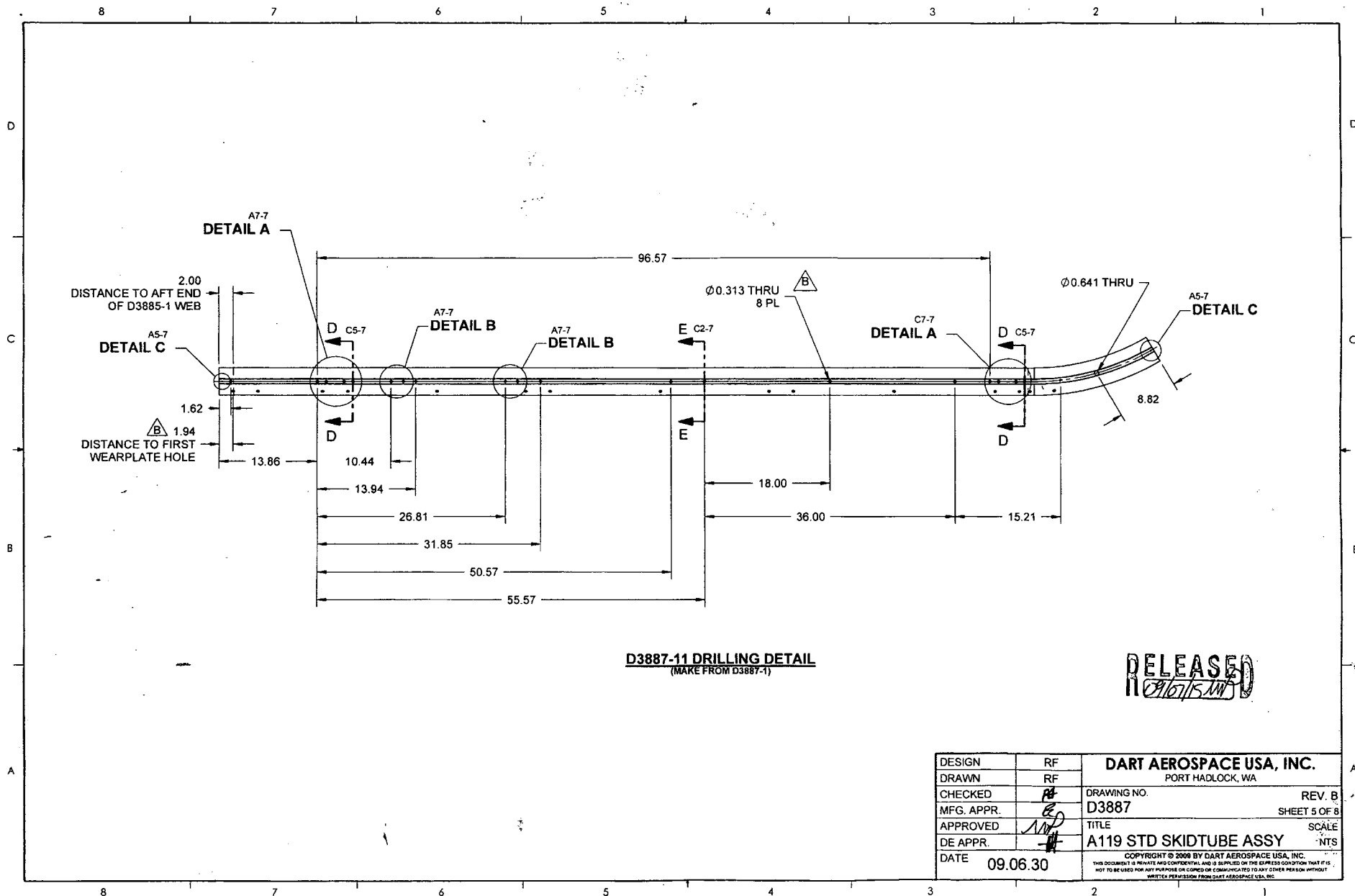
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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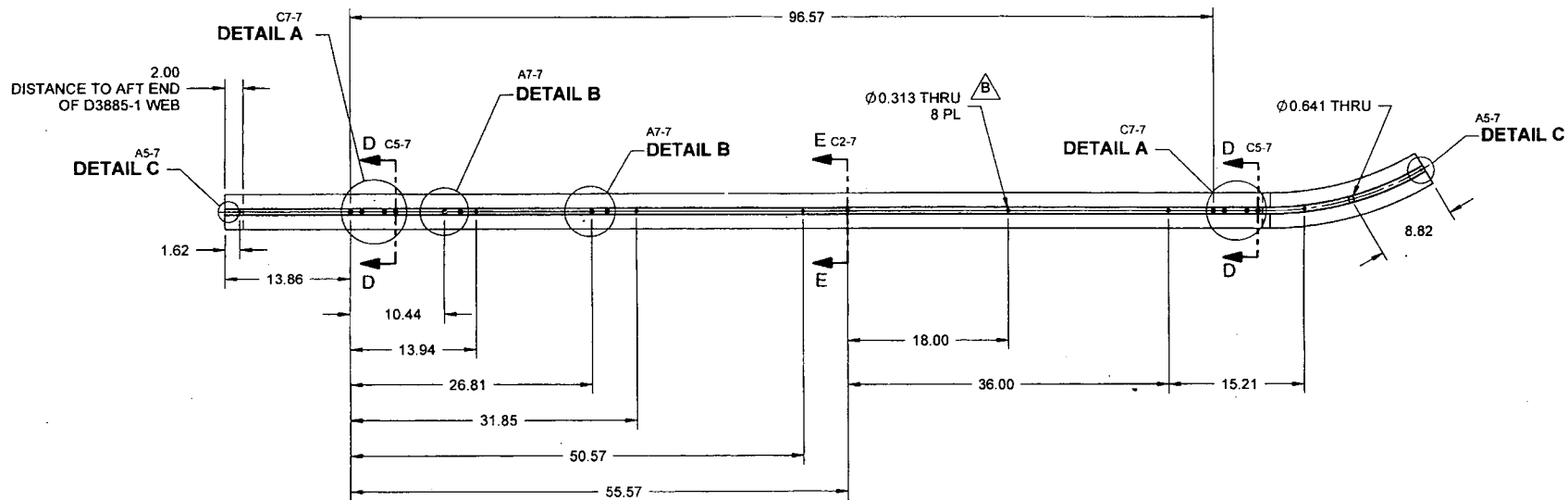
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D3887-13 DRILLING DETAIL
(MAKE FROM D3887-1)

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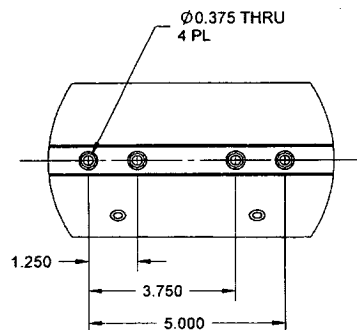
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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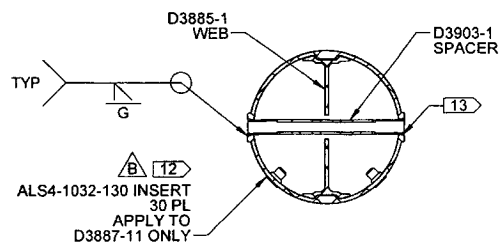
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DETAIL A
SCALE 4X

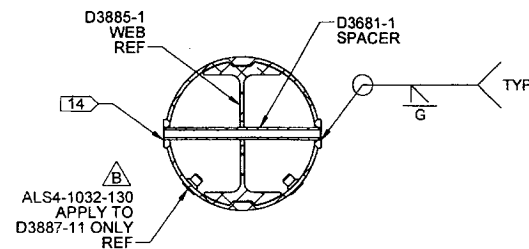
D7-5
C3-5
D7-6
C3-6



SECTION D-D
SCALE 4X

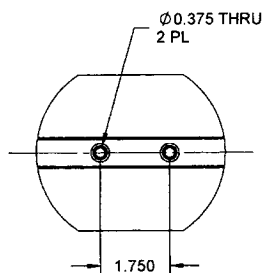
(FOR 12 X Ø0.375 HOLES
PER SKIDTUBE)

C7-5
C3-5
C7-6
C2-6



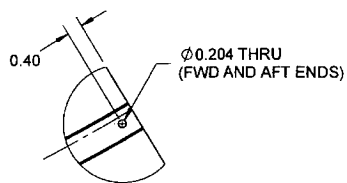
SECTION E-E
SCALE 4X
(FOR 8 X Ø0.313 HOLES
PER SKIDTUBE)

C4-5
C4-6



DETAIL B
SCALE 4X

C6-5
C5-5
C6-6
C5-6



DETAIL C
SCALE 4X

C8-5
C1-5
C8-6
C1-6

NOTES:

13) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:

- i) CHAMFER HOLES Ø0.475 x 45°
- ii) INSERT D3903-1 SPACER
- iii) WELD INTO PLACE AND GRIND FLUSH
- iv) C BORE TO 0.313 x 0.75 DEEP
- v) DEBURR HOLES



14) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.313 HOLES ONLY:

- vi) CHAMFER HOLES Ø0.354 x 45° OR 0.050 DEEP x 45° (BOTH SIDES)
- vii) INSERT D3681-1 SPACER
- viii) WELD INTO PLACE AND GRIND FLUSH
- ix) DEBURR HOLES



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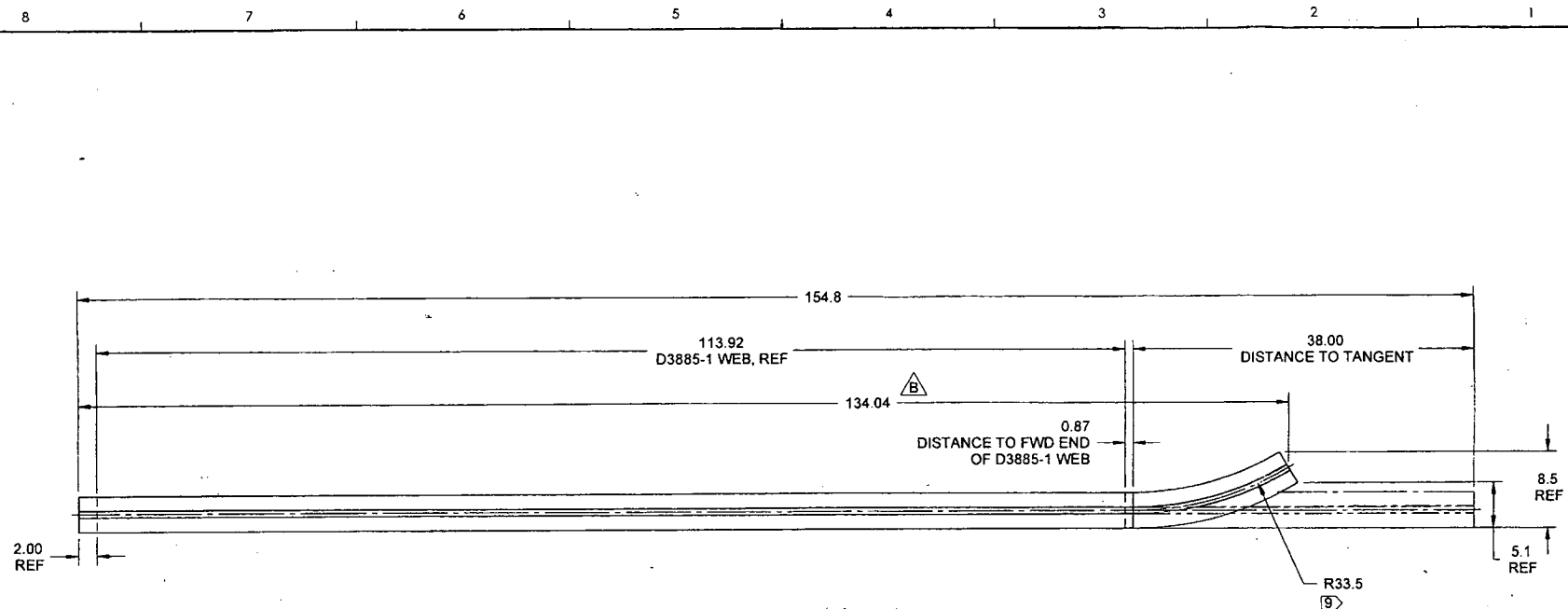
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D3887-1 BEND DETAIL
(MAKE FROM D2500-1-190 EXTRUSION)

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11/15/2009

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